

### **REMARKS**

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-22 are all the claims pending in the application. In response to the Office Action, Applicant respectfully submits that the claims define patentable subject matter.

#### **I. Overview of the Office Action**

Claims 1-10 are rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Claims 1 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by DiFazio (U.S. Patent Application Publication No 2003/0063576). Claims 1, 2, 8, 11, 12, 16, 17, and 20 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott et al. (U. S. Patent No. 6,154,486, hereafter “Scott”) in view of DiFazio. Claims 4, 5, 14, and 15 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott in view of DiFazio and further in view of Karlsson et al. (U.S. Patent Application Publication No. 2002/0057730, hereafter “Karlsson”). Claims 10 and 22 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott in view of DiFazio and further in view of Bhatoolaul (U.S. Patent Application Publication No. 2001/0046864, hereafter “Bhatoolaul”). Claims 13, 18, 19 and 21 remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully traverses the prior art rejections.

#### **II. Preliminary Matters**

The Examiner has rejected claim 20 as being unpatentable over Scott in view of DiFazio and further in view of Bhatoolaul. However, claim 20 depends on claim 18, which is indicated by the Examiner, as being allowable. Accordingly, claim 20 should be allowable as a matter of

right. The Examiner is requested to clarify this discrepancy in the next Office Action and remove the rejection of claim 20.

### **III. Claim Objections**

The Examiner has objected to claim 11 because of an informality. By this Amendment, Applicant has amended claim 11 in order to improve clarity. Accordingly, the Examiner is requested to remove the objection to claim 11.

### **IV. Rejection Under 35 U.S.C. § 101**

Claims 1-10 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Specifically, the Examiner asserts:

While the claims recite a series of steps or acts to be performed, a statutory “processes” under 35 U.S.C. § 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.<sup>2</sup> (emphasis included)

Applicant respectfully disagrees with the Examiner’s position, and further submits that the Examiner’s § 101 rejection is clearly erroneous.

MPEP 2106.IV.C(2) details the review that should be made to determine whether a claimed invention falls within 35 U.S.C. § 101 judicial exceptions, since claims directed to nothing more than abstract ideas (such as mathematical algorithms), natural phenomena, and laws of nature are not eligible for patent protection. MPEP 2106.IV.C further states that while

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<sup>2</sup> Page 3 of the Office Action dated December 10, 2008.

abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be.

MPEP 2106.IV.C.2 then outlines the various evaluations that must be made to determine whether a claimed invention covers either a 35 U.S.C. § 101 judicial exception (abstract ideas, natural phenomena, and laws of nature) or a practical application of a 35 U.S.C. § 101 judicial exception. One of these evaluations includes determining whether the practical application produces a useful, concrete and tangible result, wherein “the tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. § 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result.”<sup>3</sup>

The instant application does not pertain to an abstract idea (such as mathematical algorithms), a natural phenomenon, or laws of nature.

MPEP 2106 further states that if USPTO personnel determine that the claim does not entail the transformation of an article, then USPTO personnel shall review the claim to determine if it produces a useful, tangible, and concrete result. In making this determination, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but

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<sup>3</sup> MPEP 2106.IV.C(2)(b).

rather on whether the final result achieved by the claimed invention is "useful, tangible, and concrete.

In independent claim 1, channel parameters representing a statistical behavior of a radio channel are estimated and a detection magnitude is evaluated on the basis of the estimated channel parameters and a correlation between a signal received at a receiver system and a predetermined digital sequence which the transmitted burst signal, wherein the detection magnitude is compared with an adaptive threshold to decide whether the signal burst is detected. The detection of the burst signal would be the "tangible result" of the invention as claimed in independent claim 1.

Further, the "usefulness" of the claimed invention is that the improvement in the reliability of detection reduces the communications setup failure rate.

Still further, even if claim 1 falls within a judicial exemption, they would be directed to a practical application of a judicial exemption, and therefore would constitute patentable subject matter under 35 U.S.C. § 101, since, as noted in The Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106), if a claimed invention falls within a judicial exemption, it is nonetheless directed to statutory subject matter if it is directed to a practical application of that judicial exception. In particular, a claimed invention is directed to a practical application if it transforms an article or physical object to a different state or thing, or otherwise produces a useful, concrete, and tangible result. The Guidelines state that the tangible result requirement only requires that a "process claim must set forth a practical application of that judicial exception to produce a real-world result." The Guidelines further state that a patent is granted for "the discovery or invention of some practical method or means of producing a beneficial result or

effect.” As discussed above, the detection of the burst signal is the “tangible result” of the invention.

According to the Federal Circuit’s recent decision in *In re Bilski*, No. 07-1130 (Fed. Cir. Oct. 30, 2008) (en banc), a claimed process is surely patent-eligible under 35 U.S.C. § 101 if (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. Slip op. at 10. In the instant application, a method for detecting a signal burst is presented. Because the method recited in claim 1 is directed to detecting a signal burst transmitted on the initiative of a sender on a radio channel listened to by a receiver system, the claimed method is tied to the radio channel and the receiver system.

Accordingly, for at least these reasons, Applicant submits that the Examiner has failed to establish a prima facie case of unpatentability under 35 U.S.C. § 101, and requests that the rejection of claims 1-10 under 35 U.S.C. § 101 be reconsidered and withdrawn.

**V. Rejection Based on 35 U.S.C. § 102**

The Examiner asserts that DiFazio teaches all of the elements of independent claim 1 and analogous independent claim 11. Applicant respectfully disagrees with the Examiner’s position.

Independent claim 1 and analogous independent claim 11 recite in part:

detecting a signal burst transmitted on the initiative of a sender on a radio channel listened to by a receiver system, the transmitted burst representing a predetermined digital sequence, in which method channel parameters representing a statistical behaviour of the radio channel are estimated and a detection magnitude is evaluated on the basis of the estimated channel parameters and of a correlation between a signal received at the receiver system and the predetermined digital sequence, wherein the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected.

Applicant respectfully submits that there is no teaching or suggestion in DiFazio that “a detection magnitude is evaluated on the basis of the estimated channel parameters and of a correlation between a signal received at the receiver system and the predetermined digital sequence”, as recited in the claims.

The Examiner appears to assert that the claimed “detection magnitude” allegedly reads on the signal power 13 in FIG. 3 of DiFazio. DiFazio teaches that a burst detector 10 receives a signal at a matched filter 12 and a noise estimator 11. The noise estimator estimates the noise power of the received signal (paragraph [0028]). The noise power estimate is scaled by a predetermined scaling factor generating a threshold value, and is forwarded to a comparator 14. The signal power estimator receives the output of the matched filter and estimates the signal power of the soft decisions in the received communication (paragraph [0030]). Once the signal power estimator determines the signal power of the soft decisions in the received communications, it is forwarded to the comparator 14.

It is quite clear from the depiction in FIG. 3 of DiFazio that the signal power is not evaluated on the basis of the noise estimation, since the output of the noise estimator and the output of the signal power estimator are compared and transmitted to the data estimation device 2. In other words, there is no input from the noise estimator to the signal power estimator in order to allow the signal power to be estimated on the basis of a noise estimation. FIG. 1 of the present invention clearly shows that an output of the calculation of moments is sent to an input of the RACH detection. Accordingly, DiFazio cannot teach or suggest that “a detection magnitude is evaluated on the basis of the estimated channel parameters and of a correlation between a

signal received at the receiver system and the predetermined digital sequence”, as recited in the claims.

Accordingly, Applicant respectfully submits that independent claims 1 and 11 should be allowable because the cited reference does not teach or suggest all of the elements of the claims. Claims 2-10 and 12-22 should also be allowable at least by virtue of their dependency on independent claims 1 and 11.

**VI. Rejection Based on 35 U.S.C. § 103**

The Examiner asserts that Scott teaches all of the elements of independent claims 1 and 11 except that “a detection magnitude is evaluated on the basis of the estimated channel parameters”, as recited in claim 1 and analogously recited in claim 11. The Examiner thus relies on DiFazio to allegedly cure this conceded deficiency. Applicant respectfully disagrees with the Examiner’s position.

Applicant respectfully submits that Scott has little or no relevance to the present invention. Scott teaches a detection method for repeated codeword preamble codes by partitioning the repeated codeword preamble code into its constituent subcodes and detecting a correlation peak with respect to each constituent subcode (column 37, lines 28-48). Scott further teaches detecting four correlation peaks in test signal locations, each of which is connected to its own threshold comparator 1387 and each of which is also connected to a threshold signal 1397 output from a threshold setting circuit 1383. When the signal value at a test signal location 1387 exceeds the threshold signal level, the respective comparator 1384 changes state.

Nowhere does Scott teach or suggest comparing an adaptive threshold to a detection signal to decide if a signal burst is detected.

The Examiner cites column 41 lines 10-57 and specifically lines 42-44 of Scott as allegedly teaching “the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected”, as recited in the claims. A close reading of this cited portion of Scott indicates no teaching of this aspect of the claims.

Further, as indicated above, there is no teaching or suggestion in DiFazio that “a detection magnitude is evaluated on the basis of the estimated channel parameters”, as recited in the claims.

Accordingly, Applicant respectfully submits that independent claims 1 and 11 should be allowable because the cited references, alone or in combination, do not teach or suggest all of the elements of the claims. Claims 2-10 and 12-22 should also be allowable at least by virtue of their dependency on independent claims 1 and 11.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.



Application No.: 10/719,776

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: March 9, 2009